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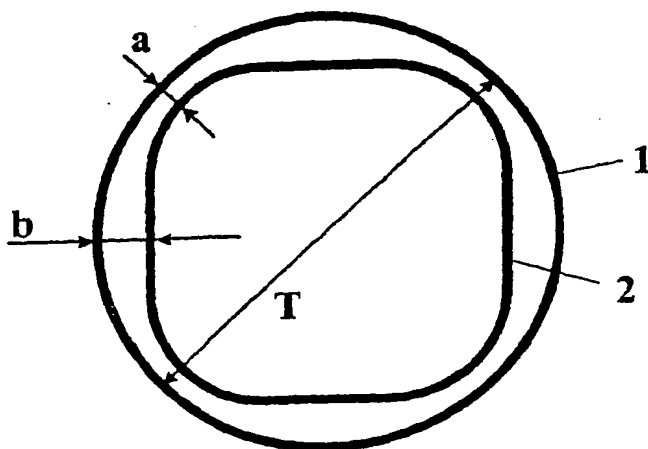
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(54) Title: ROTATING STIRRING DEVICE WITH SUBSTANTIALLY NARROW DISTRIBUTION OF ENERGY DISSIPATION RATE



(57) Abstract: A rotating stirring device for generat-
ing substantially narrow distribution of energy dissi-
pation rate and avoiding presence of Taylor vortices is
disclosed. The device comprises an outer member (1)
such as a cylinder with cross-section of circular shape
and an inner member (2) with cross-section of equilat-
eral or inequilateral polygon shape with curved cusps.
The inner member is preferably concentrically placed
within the outer cylinder and rotates. Such device is
particularly advantageous as a reactor or mixer for pro-
cesses where chemical and physical properties are sen-
sitive to the variations in the shear rate and for pro-
cesses that involve fragile components. The device can
be also used to replace Taylor Couette device for the
purposes of improving mass transfer and of avoiding
separation of components in the gap in the case of pres-
ence of differences in density among components.